

Carleton University School of Computer Science
COMP 3004 – Object-Oriented Software Engineering
Course Outline -- Winter 2017
Final version
Last modified: Tuesday, January-03-17

Class Schedule

Classroom:	LA C164
Class times:	Tue. and Thu. 11:30 – 13:00
Course web site:	cuLearn

Instructor Information

Instructor	Office	Telephone	Email	Office Hours
Dr. Christine Laurendeau	5376 HP	613-520-2600 x1253	christine.laurendeau@carleton.ca	posted in <i>cuLearn</i>

Teaching Assistants

Detailed TA information can be found in *cuLearn*.

Course Description

Theory and development software systems. This course will discuss computer ethics. Possible topics include: software development processes, requirement specification, class and scenario modeling, state modeling, UML, design patterns, traceability. Students are to complete a team project using a CASE tool.

Topics Covered

The course will cover the following topics, although some material may be omitted due to time constraints:

- Introduction to Software Engineering
 - Software engineering at a glance
 - Team project (team organization, project description)
 - UML notation
- Software Development Life Cycle
 - Requirements analysis (requirement specification, traceability, scenarios, use cases, functional&dynamic models)
 - High-level system design (design patterns, subsystem decomposition, interfaces, architectural styles)
 - Detailed object design (reuse, object model, contracts and constraints)
 - Implementation (model transformation, refactoring, forward/reverse engineering, optimizations)
 - Testing (test planning, usability testing, unit testing, integration testing, system testing)
- Software Management
 - Project management (planning, organizing, risk management)
 - Software life cycle models (activity-centered, entity-centered)
 - Configuration management (change management, version management, system building, release management)
- Professional Ethics (covered as a series of class discussions)
 - Professionalism
 - Software engineering code of ethics
 - Case studies

Prerequisites

COMP 2404

Note: Students who are granted equivalencies or transfer credits in lieu of the prerequisite course(s) and students who performed poorly in the prerequisites are responsible for learning all missing background material on their own.

Textbook(s)

Bernd Bruegge and Allen H. Dutoit, *Object-Oriented Software Engineering: Using UML, Patterns, and Java*, 3rd edition, Pearson, 2009, ISBN: 0136061257

Evaluation

Students will be evaluated in this course according to the following measures:

Component	Weight	Due Dates
Project Phase #1	25 %	Feb. 14 and Mar. 7
Project Phase #2	25 %	Mar. 23 and Apr. 6
Midterm Exam	15 %	Feb. 28
Final exam	35 %	TBA

Evaluation Notes

- This course involves four (4) project deliverables, organized into two phases. In order to pass the course, students must obtain a passing grade for each phase, **and** a passing grade on the final exam.
- Every team member must contribute an **equal amount of work** to each deliverable. Students who contribute less than their equal share will have their individual mark reduced based on their contribution.
- All deliverable and midterm marking disputes must be addressed with the individual responsible for marking the work (TA or instructor), within **one week** of the marks being posted. In cases where a student and a TA cannot agree, the matter will be referred to the instructor for resolution.
- There will be no extra credit available in this course.

Important Dates

- Design reviews of Phase #1 will take place in class on Mar. 7, Mar. 9, Mar. 14 and Mar. 16, and possibly extending into Mar. 21. Each team is required to present their design at the time when they are called upon, without prior notice. Every member of the team required to present for an equal amount of time.

Course Material

- All concepts covered in class and during tutorials are part of the course material, including the course notes and annotations, all in-class exercises, and in-class and forum discussions.
- Lecture recordings may be provided, but **exclusively** as a supplemental study aid. They are **not** a substitute for lecture attendance and note taking. *Some lectures may not be recorded, and some recordings may not be available*, at the sole discretion of the instructor. Students are responsible for learning the material covered during all lectures, whether recordings are available or not.
- All materials created for this course (including, but not limited to, course notes, coding examples, lecture recordings, sample project examples, project descriptions and deliverables, marking schemes, tests/midterms, exams, and test/midterm/exam solutions) remain the *intellectual property of the instructor*. They are intended for the personal and non-transferable use of students registered in the course. Reproducing, reposting, and/or redistributing any course materials, in part or in whole, without the written consent of the instructor, is a copyright violation and is **strictly prohibited**.

Collaboration Policy

- Collaboration on the project is restricted to members of the same team, which will consist of no more than four (4) students.
- Inter-team collaboration is **strictly** disallowed and will be reported to the Dean of Science as an instructional offense.
- Posting deliverable work online and distributing deliverable work to other students **at any time** is strictly prohibited and will be reported to the Dean of Science as an instructional offense. This includes work posted on source control sites like GitHub. ***** Do not store your work in a public account! *****

Project

Teamwork

- All project work is team-based. Teams will consist of no more than four (4) students.
- Every team will be assigned the same project, regardless of team size.
- The configuration and membership of all teams must be approved by the instructor, and so must all changes to the teams. Deliverables submitted by unauthorized teams will be given a grade of zero.
- The instructor retains the **exclusive** right to dissolve teams and/or reorganize team membership at her discretion.
- Students who fail to sufficiently contribute to a deliverable will be removed from their team.
- The instructor will assist in the formation of initial teams. However, students who are removed from a team are responsible for finding a new team to join, subject to instructor approval. Failure to join a team will result in the student becoming a one-person team.

Deliverables

- There will be four (4) project deliverables in this course, and the requirements will be posted in *cuLearn*.
- Additional information and requirement clarifications will be posted in the deliverable discussion forums in *cuLearn*. Students are responsible for following all instructions posted in these forums.
- Every team member is expected to work on the project for a minimum of nine (9) hours every week.
- Programming deliverables must be completed in the programming environment (Virtual Machine) provided.
- All deliverable work submitted for credit must be **original**, and the students submitting the work must be its sole authors.
- All deliverables are to be submitted in *cuLearn*, before the due date and time. Late deliverables will **not** be accepted for any reason.
- Peer reviews will be submitted in confidence by individual students at the same time as each deliverable. Each student will describe the work performed on the deliverable by the student him/herself and by every member of their team.
- Peer reviews will be used to adjust each team member's grade for the deliverable, based on their contribution to the submitted work. Students who contribute less than their equal share will have their individual grade reduced correspondingly.
- Failure by a student to submit a peer review will result in the student losing their right to argue against a reduction of their grade based on insufficient contribution.

Communications Policy

- Students are expected to check their email on a **daily** basis. Important course-related announcements will be posted on *cuLearn* and forwarded to students' email accounts.
- Due to a high volume of emails, *the instructor will be unable to answer emailed questions*, unless they are of a private or confidential nature. Course policy requires that students post **all questions** about the course and project deliverables in the appropriate discussion forum in *cuLearn*. Please verify whether your question has already been answered. If not, you can post your question and it will be answered in the forum.
- Students are expected to behave and communicate in a **courteous** and **professional** manner at all times. Any communications, either in person, or online in forum posts and email, that do not follow the basic precepts of common courtesy and professionalism will not be answered, and in extreme cases will be reported to university authorities.
- In case of technical issues with the installation or operation of the provided Virtual Machine, students are required to first **read the documentation** posted in *cuLearn*. Additional assistance may be provided by the SCS technical support team (support@scs.carleton.ca), and **not** by the TAs or the instructor.
- The instructor's office hours are in effect from Jan. 5 to Apr. 7, excluding the week of the Winter Break.

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca. The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

University Policies

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar.

Plagiarism

As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science.

Unauthorized Co-operation or Collaboration

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable) at <http://www2.carleton.ca/pmc/new-and-current-students/datesand-deadlines/>

Religious Obligation

Write to the instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Pregnancy Obligation

Write to the instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Medical Certificate

The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations or assignments in undergraduate courses. To access the form, please go to <http://www.carleton.ca/registrar/forms>